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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/705,876   | 11/13/2003  | Torsten Olofsson     | 027651-144          | 6290             |
| 21839  | 7590        | 12/07/2005           | EXAMINER            |                  |
| BUCHANAN INGERSOLL PC<br>(INCLUDING BURNS, DOANE, SWECKER & MATHIS)<br>POST OFFICE BOX 1404<br>ALEXANDRIA, VA 22313-1404 |             |                      | HON, SOW FUN        |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 1772                |                  |

DATE MAILED: 12/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |
|------------------------------|------------------------|---------------------|
|                              | 10/705,876             | OLOFSSON ET AL.     |
| Examiner                     | Art Unit               |                     |
| Sow-Fun Hon                  | 1772                   |                     |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 29 September 2005.

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-39 is/are pending in the application.  
4a) Of the above claim(s) 20-28 and 37-39 is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-19 and 29-36 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .

5)  Notice of Informal Patent Application (PTO-152)

6)  Other: \_\_\_\_ .

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 20-28,37-39 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 9/29/05.
2. Applicant's election with traverse of claims 1-19, 29-36 in the reply filed on 9/29/05 is acknowledged. The traversal is on the ground(s) that the subject matter of claims 1-64 is sufficiently related that the search and examination of the entire application could be performed without serious burden. This is not found persuasive because the withdrawn method claims have acquired a separate status in the art as shown by their different classification in class 156, subclass 244.27, and are examined differently by examiners in the process art.

The requirement is still deemed proper and is therefore made FINAL.

### ***Withdrawn Rejections***

3. The obviousness-type double patenting and 35 U.S.C. 112,2<sup>nd</sup> paragraph and 103(a) rejections have been withdrawn due to the amendment dated 9/29/05.

### ***New Rejections***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Double Patenting***

5. Claims 1-19, 29-36 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, 11-29, 33, 42, 46-51 of copending Application No. 11/123,122. Although the conflicting claims are not identical, they are not patentably distinct from each other because examined independent claim 1 recites a gas barrier packaging laminate comprising outside layers of heat-sealable olefin polymer, a first gas barrier layer of PECVD SiO<sub>x</sub> coated onto a first polymer carrier layer, where x is from 1.7 to 2.0; a second gas barrier layer of PECVD SiO<sub>x</sub> coated onto a second polymer carrier layer, where x is from 1.7 to 2.0; and an intermediate polymer layer laminated between the first and the second gas barrier coated layers, wherein the stiffness of each of the first and second polymer carrier layers interacts with the thickness of the intermediate polymer layer in a structural sandwich construction, as also recited by potentially conflicting dependent claim 18 which depends on potentially conflicting independent claim 1. The transparent gas barrier packaging is recited by potentially conflicting dependent claim 28. The higher thickness of the intermediate layer relative to each of the first and second gas barrier coated carrier layers, is recited by potentially conflicting dependent claim 23. The higher stiffness of the intermediate layer relative to each of the first and second gas barrier coated carrier layers, is provided by the polymers which form each layer. Examined dependent claim 6 recites high density polyethylene or polypropylene for the intermediate layer, recited by potentially conflicting dependent claim 11, and examined dependent claim 7 recites oriented polyester or polyamide for the first and second

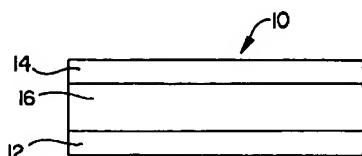
polymer carrier layers, recited by potentially conflicting dependent claim 16. When the limitations of potentially conflicting dependent claims 11, 16, 23, 28 are both placed into potentially conflicting claim 1, the positive limitations in examined claim 1 are met.

6. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 103***

7. Claims 1-17, 19, 29-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keiser (US 6,521,312) in view of Löfgren (EP 0 385 054) and Izu (US 5,670,224).

Regarding claims 1, 6, 8, 17, 19, Keiser teaches a transparent (essentially clear) (column 2, lines 5-10) packaging laminate comprising a first polymer carrier layer and a second polymer carrier layer, an intermediate polymer layer laminated between the first and second polymer carrier layers, the intermediate polymer layer having a higher thickness relative to each of the first and second polymer carrier layers, wherein a stiffness of each of the first and second polymer carrier layers interacts with the stiffness and higher thickness of the intermediate polymer layer by an I-beam or sandwich (symmetrical laminate) effect in order to provide the bending stiffness (column 6, lines 30-45). Fig 1B of Keiser below shows polymer carrier layers 12, 14, and thicker intermediate layer 16.



Keiser teaches that the stiffness of the multilayer structure 10 exceeds the stiffness of each of the component layers, which is synergistic (column 6, lines 18-28). Keiser provides examples of the intermediate (inner) layer which can be LDPE, high density polypropylene (HDPE) and polypropylene (PP, column 12, lines 1-20), whereby the high density polyethylene and polypropylene, as an intermediate layer with higher material stiffness (modulus), provide much higher laminate stiffness than LDPE.

Keiser fails to teach that polymer carrier layers 12, 14 are SiO<sub>x</sub> gas barrier coated, wherein x is from 1.7 to 2.0, that the SiO<sub>x</sub> gas barrier layers of the first and second gas barrier coated carrier layers are positioned in the laminate such that they are facing towards each other, or that the intermediate polymer layer is laminated to the layers of SiO<sub>x</sub> by means of a binder layer.

Löfgren teaches packaging laminates which are provided with a gas barrier of SiO<sub>2</sub> which is a species of SiO<sub>x</sub> wherein x is 2.0, coated onto a first polymer carrier layer and a second polymer carrier layer (column 3, lines 29-34), wherein the SiO<sub>2</sub> gas barrier layers of the first and second gas barrier coated carrier layers are positioned in the laminate such that they are facing towards each other (abstract). The intermediate polymer layer is laminated to the layers of SiO<sub>2</sub> by means of a binder layer (bonding agent, column 5, lines 42-47). Löfgren teaches that the SiO<sub>2</sub> layers possess extraordinarily good gas and aroma barrier properties, are inert to the contents of the finished package, and sufficiently flexible for conversion of the laminate into packaging containers (column 2, lines 28-44).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have coated the polymer carrier layers of Keiser with SiO<sub>2</sub>, along with the accompanying positioning of the SiO<sub>2</sub> layers in the laminate, taught by Löfgren, in order to obtain the desired gas and aroma barrier properties, and the desired inertness to the contents of the finished package, while retaining the flexibility of the laminate for conversion into packaging containers, as taught by Löfgren.

Keiser fails to teach outside layers of heat-sealable olefin polymer.

Löfgren teaches that outside layers of heat-sealable olefin polymer (column 55-60) allows the formation of liquid-tight mechanically strong sealing joints (column 4, lines 1-10). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided outside layers of heat-sealable olefin polymer to the laminate of Keiser in view of Löfgren, in order to form a packaging container with the desired liquid-tight mechanically strong sealing joints, as taught by Löfgren.

Keiser in view of Löfgren fails to teach that the SiO<sub>2</sub> is PECVD (plasma enhanced vapor deposited).

Izu teaches that PECVD SiO<sub>x</sub> provides truly colorless and transparent films for packaging applications (silicon oxide based, column 2, lines 26-35).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used PECVD SiO<sub>x</sub> as the SiO<sub>x</sub> of Keiser in view of Löfgren, in order to provide a truly colorless and transparent packaging laminate, as taught by Izu.

The limitation of “having a bending stiffness for packaging of liquid foods and drinks by a high speed, continuous process” is a recitation of the intended use of the claimed invention, which must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See MPEP 2111.02[R-3]. In the instant case, the laminate of Keiser in view of Löfgren and Izu has the recited layers, and therefore is expected to have the bending stiffness needed for packaging of liquid foods and drinks by a high speed, continuous process.

Regarding claim 2, Keiser provides an example where the thickness of the intermediate polymer layer constitutes 54 % (2.16/4) (column 12, line 16), which is within the claimed range of from 30 to 55 % of the total thickness of the packaging laminate.

Regarding claims 3, 30, Keiser fails to teach that a thickness of one of the first polymer carrier layer and the second polymer carrier layer constitutes from 5 to 20 % of a total thickness of the packaging laminate. However, Keiser provides an example where the thickness of one of the first polymer carrier and the second polymer carrier constitutes 23 % ( $\{[4 - 2.16]/[4 \times 2]\}$ ) (column 12, line 16), and teaches that the thickness of the thicker intermediate polymer layer is varied (column 6, lines 5-10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have increased the thickness of the intermediate layer so that the thickness of one of the first polymer carrier and the second polymer carrier

decreases from 23 % to within the claimed range of from 5 to 20 %, or from 5 to 15 % of the total thickness of the packaging laminate.

Regarding claims 4-5, 7, Keiser teaches that first and second carrier (outer film) layers are films of biaxially oriented polyethylene terephthalate (column 4, lines 55-60).

Regarding claims 10-11, 32-33, Keiser teaches that the thickness of each of the first and second carrier (film) layers is from about 6 to about 75 microns (column 4, lines 65-70), which overlaps the claimed range of from 7 to 30 microns (claim 10), from 8 to 20 microns (claim 32) and from 8 to 15 microns (claim 33). Keiser teaches that the first polymer carrier layer and the second polymer carrier layer can have the same thickness (column 5, lines 1-5) (claim 11).

Regarding claims 9, 31, Keiser fails to teach the SiO<sub>x</sub> layers, and hence the thickness of the SiO<sub>x</sub> layers.

However, Löfgren teaches that the thickness of the SiO<sub>x</sub> (inorganic) layer is 50 to 500 Å (column 5, line 15) (claim 9), which overlaps the claimed range of 80 to 300 Å (claim 31).

Therefore the thickness of the SiO<sub>x</sub> (inorganic) layer is 50 to 500 Å, which overlaps the claimed range of 80 to 300 Å, in the transparent gas barrier packaging laminate of Keiser in view of Löfgren and Izu.

Regarding claims 12, 34-35, Keiser teaches that thickness of the intermediate polymer layer is from about 25 to about 125 microns (column 6, lines 5-10) which overlaps the claimed range of from 40 to 80 microns (claim 12), from 40 to 60 microns (claim 34), and from 40 to 55 microns (claim 35).

Regarding claims 13-16, 36, Keiser teaches that the thickness of the intermediate polymer layer can range from about 50 to about 100 microns (column 3, lines 15-20), which overlaps the claimed range of from 40 to 60 microns (claim 14), from 40 to 50 microns (claim 15), and from 50 to 60 microns (claim 16); and that the thickness of the first and second polymer carrier (outer) layers can each range from about 6 to about 75 microns (column 3, lines 1-5), which overlaps the claimed range of from 8 to 15 microns (claim 14), from 12 to 15 microns (claim 15), and from 8 to 12 microns (claim 16), which also means that the total thickness of the packaging laminate can range from 62 to about 250 microns, which overlaps the claimed range of from 100 to 180 microns (claim 13), and from 110 to 140 microns (claims 14, 36).

Regarding claim 19, Keiser teaches that the laminate can be used as a packaging laminate (column 6, lines 34-44), but fails to teach that a packaging container is manufactured from a packaging material comprising the laminate.

Löfgren teaches that the  $\text{SiO}_2$  layers possess extraordinarily good gas and aroma barrier properties, are inert to the contents of the finished package, and sufficiently flexible for conversion of the laminate into packaging containers (column 2, lines 28-44).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have manufactured a packaging container from a packaging material containing the packaging laminate of Keiser in view of Löfgren and Izu, in order to obtain the desired finished package, as taught by Löfgren.

Regarding claim 29, Keiser fails to teach that the thickness of the intermediate polymer layer constitutes from 35 to 50 % of the total thickness of the packaging

laminate. However, Keiser provides an example where the thickness of the intermediate polymer layer constitutes 54 % (2.16/4.0) of the total thickness of the packaging laminate (column 12, line 16), and teaches that employing thicker outer layers to provide a higher stiffness is also part of the invention (column 13, lines 8-10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have increased the thickness of the outer layers of the laminate so that the thickness of the intermediate polymer layer is within the claimed range of from 35 to 50 % of the total thickness of the laminate of Keiser in view of Löfgren and Izu, in order to obtain the desired bending stiffness, as taught by Keiser.

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Keiser in view of Löfgren and Izu as applied to claims 1-17, 19, 29-36 above, and further in view of Sakai (US 5,591,522).

Keiser in view of Löfgren and Izu teaches a gas barrier packaging laminate comprising outside layers of heat-sealable olefin polymer, a first gas barrier coated carrier layer including a first gas barrier layer of PECVD SiO<sub>x</sub>, wherein x = 1.7 to 2.0, coated onto a first polymer carrier layer, and a second gas barrier coated carrier layer including a second gas barrier layer of PECVD SiO<sub>x</sub>, wherein x = 1.7 to 2.0, coated onto a second polymer carrier layer, the SiO<sub>x</sub> gas barrier layers of the first and second gas barrier coated carrier layers are positioned in the laminate such that they are facing each other, and an intermediate polymer layer having a higher stiffness and a higher thickness relative to each of the first and second gas barrier coated carrier layers, laminated to the layers of SiO<sub>x</sub> by means of a binder layer.

Keiser in view of Löfgren fails to teach that the binder layer comprises a graft copolymer of alkoxy silane and polyethylene.

However, Sakai teaches a graft copolymer of alkoxy silane (column 2, line 51) and polyethylene as a polyolefin binder (adhesive) layer (column 2, lines 38-42), wherein the alkoxy silane grafted polyolefin provides a firm anchor with superior heat resistance and water resistance (column 5, lines 24-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used the alkoxy silane grafted polyolefin binder of Sakai, as the binder of Keiser in view of Löfgren, in order to provide a firm interlaminar anchor with superior heat and water resistance, as taught by Sakai.

### ***Response to Arguments***

9. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (571)272-1498. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Hon.  
Sow-Fun Hon  
12/02/05

  
HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
1112

12/5/05